

RESPONSE UNDER 37 C.F.R. § 1.116
U.S. Appln. No. 10/749,380 (Q79247)

REMARKS

Claims 1-28 have been examined.

This Response, filed in reply to the Office Action dated March 30, 2007, is believed to be fully responsive to each point of rejection raised therein. Accordingly, favorable reconsideration on the merits is respectfully requested.

Applicant thanks the Examiner for the courtesy extended during the telephonic interview of June 26, 2007, during which claim 9 was discussed in view of Miyamoto et al. ('467). Applicants set forth below arguments in response to the Examiner's position, which were similarly discussed in the interview.

I. Rejection under 35 U.S.C. § 102(a) over U.S.P. 6,529,467 to Miyamoto et al.
("Miyamoto")

Claims 9-11, 21, 25 and 28 have been rejected under 35 U.S.C. § 102 as being anticipated by Miyamoto. Applicant traverses this rejection.

A. Claim 9

The Examiner continues to maintain the position that the cooling pulse Tc of Miyamoto reads on Tlmax and Tlmin, which denote an output interval of the last write data signal among write data signals corresponding to a write permission signal. In particular, the Examiner asserts that the cooling pulse Tc is still a pulse which is part of the pulse waveform (i.e., the write data signal), and thus is the same as the pulse claimed in claim 9.

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Claim 9 recites a signal output method “providing a write data signal to be output during the write enable interval; outputting a write signal including the write permission signal and the write data signal; and writing information to an optical information recording medium by using the write signal”. Claim 9 further recites that that T_{lmax} denotes an output interval of a last write data signal among write data signals corresponding to a write permission signal immediately preceding a pause interval of the write signal in a case in which the pause interval of the write signal is a maximum, T_{lmin} denotes an output interval of the last write data signal among the write data signals corresponding to a write permission signal immediately preceding the pause interval of the write signal in a case in which the pause interval of the write signal is a minimum, T denotes a reference period, and the write signal is outputted so that T_{lmax} , T_{lmin} and T satisfy the formula (2): $T_{lmin} - T_{lmax} \geq 0.01T$. The Examiner asserts that the cooling pulse T_c is still a pulse which is part of the pulse waveform (i.e., the write data signal), and thus is the same as the pulse (i.e., T_{lmax} or T_{lmin}) claimed in claim 9. Applicant respectfully disagrees.

For example, Miyamoto discloses a pulse waveform including an information pulse section having at least one pulse and a mark edge adjusting pulse section continuous with the information pulse section to define the length of the mark portion (Col. 3, lines 29-44). Thus, the pulse waveform in accordance with a mark portion has two distinct sections: (1) a pulse train for writing information or data to the medium and (2) a single cooling pulse T_c for cooling the medium after being written to by the pulse train (Col. 7, lines 13-18 and FIGS. 9A and 9B). Accordingly, the cooling pulse T_c merely cools the medium to prevent the leading edge of the

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mark portion from growing but does not write information to the medium. Moreover, the cooling pulse T_c can be implemented in either the mark portion of the space portion of the waveform (Col. 9, line 61 - Col. 10, line 5 and FIGS. 9A and 9B). Thus, since Miyamoto is clear that no information is written during the space portion of the waveform (i.e., during the crystallization of the record film of the medium), it is only reasonable to conclude that no information is written to the medium during the cooling pulse T_c .

Claim 9, on the other hand, requires that T_{lmax} and T_{lmin} denote output intervals of a last write data signal among write data signals. According to claim 9, information is written to the medium by using the write signal (i.e., the write permission signal and the write data signal), and more particularly, the write data signal is output only during the write enable interval of the write permission signal. Therefore, the output intervals T_{lmax} and T_{lmin} are adjusted as information writing pulses according to the length of the pause interval of the write permission signal.

In view of the foregoing, the cooling pulse T_c of Miyamoto is not part of a write data signal (i.e., the pulse train of the information pulse section) and thus, is not the same as the last signal (pulse) among write data signals as asserted by the Examiner.

In addition to the foregoing, which was discussed in the telephonic interview of June 26, 2007, Miyamoto discloses that the basic width of the first pulse in the information pulse section is T , the width of the last pulse is T , and width of other pulses is $T/2$, and the width may vary slightly according the length of the mark portion (Col. 6, line 64 - Col. 7, line 1 and Col. 12,

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line 64 - Col. 13, line 10). Therefore, the width of the pulses in the pulse train remain consistent regardless of the length of the space portion. This is fundamentally the opposite of Applicant's claim 9.

Therefore, Miyamoto fails to disclose each and every feature of claim 9 and Applicant submits that claim 9 is patentable for at least the reasons presented above.

B. Claims 10-11

Since claims 10 and 11 depend upon claim 9, Applicant submits that claims 10 and 11 are patentable at least by virtue of their dependency.

C. Claim 21

Claim 21 has been rejected by the Examiner for similar reasons to those given for claim 9. However, for analogous reasons as set forth above for claim 9, claim 21 should also be deemed allowable.

D. Claim 25

Since claim 25 depends upon claim 9, Applicant submits that claim 25 is patentable at least by virtue of its dependency.

II. Rejection under 35 U.S.C. § 103(a) over Miyamoto in view of Sasaki et al. ("Sasaki")

Claims 1-6, 17-18, 20, 23-24 and 26-27 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Miyamoto in view of Sasaki, U.S. Publication 2004/0008601. Applicant traverses this rejection.

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A. Claim 1

The Examiner continues to maintain the position that Miyamoto teaches a difference between the pulse widths in different mark lengths in column 12, line 64 - column 13, line 10, which reads on T_{fmax} and T_{fmin} , which denote output intervals (widths) of first write data signals immediately subsequent to a pause interval of the write signal in a case where the pause interval is a maximum or minimum.

Claim 1 recites a signal output method “providing a write data signal to be output during the write enable interval; outputting a write signal including the write permission signal and the write data signal; and writing information to an optical information recording medium by using the write signal. Claim 1 further recites that T_{fmax} denotes an output interval of a first write data signal among write data signals corresponding to a write permission signal immediately subsequent to a pause interval of the write signal in a case in which the pause interval of the write signal is a maximum, T_{fmin} denotes an output interval of a first write data signal among the write data signals corresponding to a write permission signal immediately subsequent to the pause interval of the write signal in a case in which the pause interval of the write signal is a minimum, T denotes a reference period, and the write signal is outputted so that T_{fmax} , T_{fmin} and T satisfy the formula (1): $T_{fmax} - T_{fmin} \geq 0.01T$.

The Examiner contends that Miyamoto teaches a difference between the pulse widths in different mark lengths in column 12, line 64 - column 13, line 10, which reads on T_{fmax} and T_{fmin} , which denote output intervals (widths) of first write data signals immediately subsequent

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to a pause interval of the write signal in a case where the pause interval is a maximum or minimum. Applicant respectfully disagrees. As set forth above, Miyamoto teaches a pulse waveform in accordance with a mark portion has two distinct sections: (1) an information pulse section (i.e., a pulse train for writing information or data to the medium) and (2) a mark edge adjusting pulse section (i.e., a single cooling pulse T_c for cooling the medium after being written to by the pulse train). In regard to the information pulse section, Miyamoto at best discloses that the width of each pulse of the information pulse section may depend upon the length of the mark portion in which that pulse resides (e.g., Width of First Pulse f_{P3} Level - Mark portion $3T$ wide: $1T$). That is, each pulse of the alleged write data signal of claim 1 depends upon the length of the mark portion. On the other hand, the width of the cooling pulse T_c depends upon the length of a space portion (Col. 9, line 61 - Col. 10, line 5).

Claim 1 requires T_{fmax} and T_{fmin} to be dependent upon the length of the pause interval (i.e., maximum or minimum). Thus, since the width of each pulse of the information pulse section may depend upon the length of the mark portion and the cooling pulse T_c of Miyamoto is not a write data signal for reasons presented above in conjunction with claim 9, Miyamoto does not disclose the required feature of claim 1. That is, Miyamoto fails to teach or suggest setting the width of a write data signal according to the length of a pause interval. In view of the foregoing, the result of Miyamoto is not equivalent to the result of claim 1, as asserted by the Examiner.

Therefore, Applicant submits that claim 1 is patentable for at least these reasons.

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B. Remaining claims

Since claim 18 contains features that are similar to the features of claims 1 and 9, Applicant submits that claim 18 is patentable for reasons analogous to those presented above. Furthermore, the remaining claims are patentable based on their dependencies. The additional references of Spruit and Nobukuni in combination with Miyamoto and Sasaki do not make up for the deficiencies of the primary reference or primary combination.

III. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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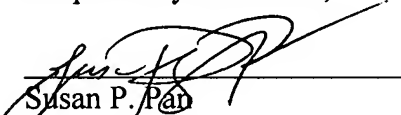
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Respectfully submitted,


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